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Towards a Model for Information Systems Capability in a South African firm

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TOWARDS A MODEL FOR INFORMATION SYSTEMS CAPABILITY IN A SOUTH AFRICAN FIRM

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ABSTRACT

Information Systems (IS) capability can be viewed as one of the firm's most valuable resources, and if controlled well, can contribute towards deriving value out of IT investments. The use of the term *capability* seems to carry varied meanings depending on whether it is looked from the enterprise architecture perspective or the business architecture perspective. Often, the confusion escalates when firms try to determine how *capabilities* are dissimilar, if at all, from their business processes. In this paper, IS capability is seen as the ability of an organization to deliver business value from investments in IT. To date, literature has not discussed IS capability beyond an expression of enabling an organization to derive and leverage business value through IS. To this point, this paper conceptualizes a framework towards IS capability, using a South African firm as a case study. In this paper, IS capability is seen from IT governance and IS management perspectives. In other words, the study was about how governance and management of IS happen in a selected firm. This paper gives a holistic and insightful nature of IS capability through an interpretive research paradigm.

Keywords

Information systems, capability, IT governance, business process, IT strategy, business Strategy, Alignment

INTRODUCTION

Development of information systems capabilities within in the organization with supplied competitive value creates better financial performance and as well as critical and acceptable service (Hushmandi et al, 2012). Shelly et al., (2006) defined Information System as a system that combines IT, people and data to support business requirements to facilitate planning, controlling coordination and decision making within an organization. Governance is defined as the way in which something is governed and the function of governing, steering and coordinating participants based on existing regulation systems (Green et al, 2010). IT Governance defines the locus of enterprise decision-making authority for core IT activities with a goal to ensure that IT investments generate business value (Sambamurthy and Zmud, 2000). Sharp (2011) has defined how business process (defined simply as a large viable use case approach) is different from capability (model which is hierarchical description of what the business does), yet capability is indistinguishable from what they call business process.

Shleiler and Vishney (1997) define corporate governance as ways in which financial suppliers of the organization assure themselves of getting returns on their investments. According to Grant et al (2010), IT governance has a significance impact on corporate governance and as such, IT governance approaches must also be represented to satisfy corporate governance agenda to ensure clarity of, and accountability for the desired outcomes; to enable understanding of the full scope of effort; breaks down the 'silos' and 'connects the dots'; manages the full economic life cycle; sense and responds to changes and deviations (*ibid*., 2010)

Firms are seeking to derive sustainable advantage from investment, and IT must be developed in high levels of IS capability (Grand and Liebanau 2002). IS capability is defined by Peppard and Ward (2004) as the ability of an organization to continuously deliver business value from investments in IS and IT. However, Bharadwaj (2000) sees it as an enterprise-wide capability to leverage technology that is reflected in business performance within the fabric of the organization to differentiate from competition. On the other hand, Ravichandran and Lertwongsatien, (2005) define IT capability as a set of regular and continuous actions in one part unit that enable one that delivers IT services to the organization - thus increasing the efficiency for transformation inputs into outputs. Peppard and Ward (2004) posits that information systems capability is embedded within the fabric of the organization as it considers developing and leveraging business value through information systems. This paper addresses IS capability in terms of IT governance and IS management, with a purpose of establishing how IS capability could be enhanced. The rest of this paper is organized as follows: the next section gives the background to the research problem; this is followed by the theoretical framework and methodology used to explore the research problem; research findings and their implications are given; and lastly the paper is concluded.

BACKGROUND TO THE RESEARCH PROBLEM

Although the concepts of information systems capability and strategic IS planning have evolved over the last two decades, there is still a degree of uncertainty surrounding their implications. Almost ten years ago, Peppard and Ward (2004) suggested that the IS literature has not defined an IS capability beyond an expression of its core objective of enabling an organization to derive and leverage business value through IS. To date, the IS discipline is still experiencing similar debates. Despite the necessity to consider both alignment and strategy formulation, the capacity of IS capability concept is often not entirely embedded or reflected in business models and performance. Gates (2010) also states that strategic planning and IT governance is not only an important foundation for executing work, but that it also sets the stage for enterprise architecture, process improvement, risk management, portfolio management, and any other enterprise-wide initiatives.

IS capability - that is, deriving value out of IT investment - is often not seen as a tangible outcome. Thus, it is difficult for organizations to justify spending on IT. Often times, a firm do not realize the benefits of IT/IS investment or the value of IT due to lack of IT/IS competencies, mismatching IT environments, continued changing IT environments and flawed management strategies. Subsequently, firms then experience challenges and issues with respect to IS capability or deriving value out of an IT investment. To this point, the study sought to observe and understand how IT activities and decisions actually happen in a South African firm.

One of the challenges observed at the study location was that, although the firm has its own IT department that supports business processes and provides information technology services, it outsources relatively most of the services. Therefore, the quality and standard of the products and support services are often compromised, with delivery dates often not met. The outsourcing of most services makes it difficult or does not enable the company to have a greater control of the outsourced services and products. The other challenge observed was that the company lacks an adequate IT governance framework, which then makes it difficult for the firm to measure its information systems' effectiveness, and how best to generate business value. The next section briefly discusses the theoretical perspectives that informed the study.

THEORETICAL FRAMEWORK AND RESEARCH METHOD

Peppard and Ward (2004) introduced the IS capability model, figure 1, which incorporates business strategy, IS strategy and IS competencies.

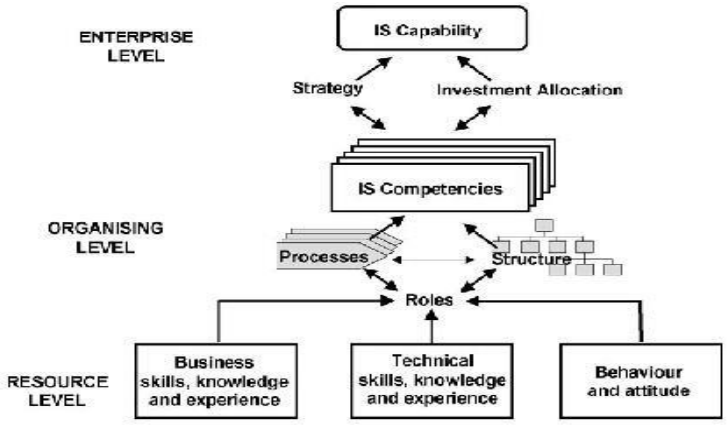

Figure 1: IS capability model (Peppard and Ward 2004)

The model addresses integration elements that establishes and adds value to IS capability through roles, processes and organizational structure. Strategy deals with how the business currently create value, and how might it create more. Structure deals with how the organization works, and how it should proceed with the issues at hand. The roles define the goals, values, or style, and how the company could ensure human resource support. The technology aspect addresses what and how the technologies work, and what the company must do to achieve its target? In the study, the positioning of the senior IT managers and their role in the overall decision making, the systems, and the personnel in the IT department was critical looked at.

The purpose of the study was to explore and describe information systems capability in a firm, with the specific goal of conceptualizing a model towards enhanced IS capability. The study employed a case study research strategy. A case study is defined as a research methodology based on an in-depth investigation of single individual, group, or event (Yin, 2003).This was a case study of a South African firm. Studying the selected firm as an entity helped to cover contextual management and

governance conditions relevant to the IS capability phenomenon. The small – medium enterprise company's core business is delivering IT healthcare business solutions to the South African healthcare industry. The firm's IT division is responsible for conveying and relaying electronic transactions between healthcare providers and medical scheme administrators. The IT leadership structure of the firm comprised of an IT manager, a Development manager, and an infrastructure and operations team manager who directly reports to the IT manager.

The case study selected participants based on their familiarity, experience and expertise on the subject matter. Although the firm has branches across South Africa, this study was conducted only at its headquarters. Data collection was done through a open-ended questionnaire, semi-structured face- to-face interviews, as well as observations. The unit of analysis was the firm. The open-ended questionnaire and the face-to-face interviews sought to address questions such as how IT investment decisions were made; how the company measured the return on IT investment; IT governance framework the company adopted or implemented; how effective governance of IT is; and how business processes were mapped with the relevant technologies or systems. Participants included business managers, IT executives, Operations and Support managers.

The study sought to explore and determine how best a firm could derive the business value from IT investments. Digitally recorded face-to-face interviews were conducted with each of the unit's manager. Each interview took about 27 minutes. The focus of the interviews was on the "what" and "how" questions - in order to gain a profound understanding of how the IS capability phenomenon manifested, in the context in which it happens.

DISCUSSION AND THE CONCEPTUAL IS CAPABILITY FRAMEWORK

The case study was used to address and understand IS capability in terms of IT governance and IT management, with a goal of making a contribution towards establishing an IS capability model. Thematic analysis was the approach followed for analyzing the data gathered. The themes identified included understanding how IT investments decisions and IT priorities are made; understanding how business and IT collaborate to drive IS capability - Alignment of business and IT strategies; understanding how IT leadership influences IS capability; and understanding how information systems resources are managed.

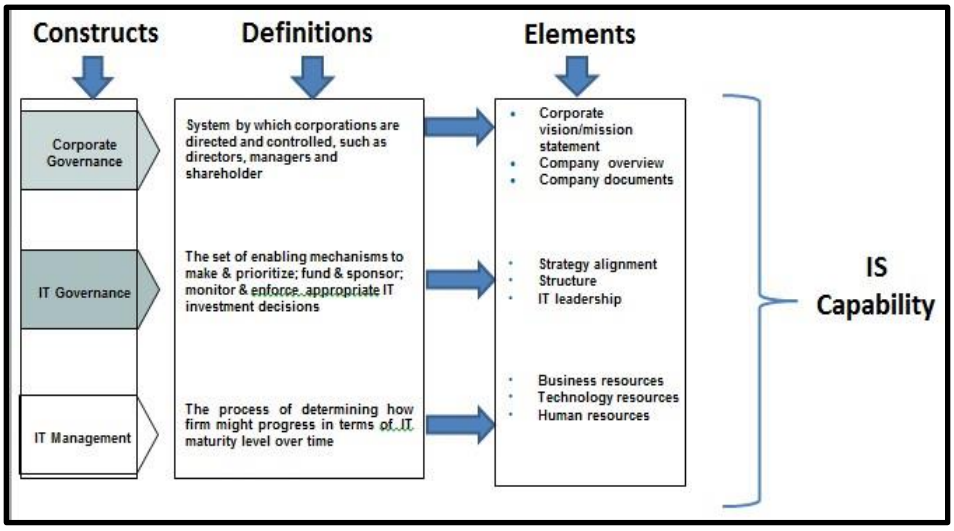

Figure 2: Conceptual IS capability framework

Van Grembergen (2005) indicates that in much broader sense, IT management focuses on effective supply of IT services, products and the management of IT operations. Similarly, Mcnurlin and Sprague (2006) state that IT management is becoming increasingly complex while it becomes increasingly important. Three major trends that impacts IT management are the governance of IT; that is, deciding who makes which IT decisions; the role of IS shifting from application delivery to system integration, and; Outsourcing becoming a way of life for many IS organizations.

What the empirical evidence show is that IS capability is a phenomenon not well understood by many. To simplify the study of this concept, we had to explore it in terms of business processes and how information systems and technologies enabled the business. We looked at who does what and how they do it within the IT department while looking at what the firm as a business does. The evidence suggests that the firm does not necessarily prioritize IT investments decisions against its business strategy. Subsequently, the intended IT performance is obscured as there is a lack of IT investments monitoring – which would lead to firm being able to realize the business value of IS. For example, a participant

remarked that "Because IT Investment (i.e. the return on specific projects) is not measured i.e. cost vs. revenue, we cannot validate if the correct projects were prioritized/actioned". The participants also highlighted that priority of the project depends on potential future revenue and the importance of the customer (size in terms of revenue).

Although the participants were able to show some understanding of what their own department strategic and operational objectives were, they were not able to show that they also understand that of other departments – or the needed synergy amongst units. This often made it difficult to understand the complementarity of the units through information systems capability. Empirical evidence also indicated that the firm has not adopted a specific IT governance framework or the framework for the management of IS. This then often leads to limited understanding of what really needs to happen, by who and when. Subsequently, issues and challenges relating to IT processes and structures are not well addressed.

In the firm, leadership is chosen on merit and performance is measured against business targets derived from the annual firm strategy. However, the empirical evidence showed that IT executives do not standardize performance measurements and the IS targets to be achieved per annum. There is no budget or decisions set to validate and prioritize the IS targets. The firm has a well-structured organizational leadership, though the business leadership seems to be at odds with the IT leadership over the prioritizing and decision making. Participants highlighted that the key challenge they have is failing to work towards a common goal or acknowledging that they complement each other. The different units seem not to understand each other's role with respect to processes and applications.

CONCLUSION

This paper explored how IS capability manifests within a South African firm. IS capability was conceptualized as achieved through a sound IT governance, IT management, and corporate governance. This paper sought to give a holistic and insightful nature of IS capability through a qualitative case study. The empirical evidence show that the challenges and issues surrounding IS capability arise because of misunderstanding of IT governance and the role IT should play within the firm. The paper has shown that IT strategies are not formulated informed by the business strategies, and this often creates tension between the varied units. Within the firm, business, structures, roles and the organization of information systems were not aligned; and thus it proved difficult for the firm to measure IT performances as well as whether the firm was deriving any IT value, in relation to achieving the business objectives. To this point, there is a need to conceptualize a model that would show how IS capability could be realized.

The conceptual framework given in this paper suggests that the way to add business value through IT governance, IT management and corporate governance is to have integration of all elements. The integrating elements including, corporate vision/vision statement, company overview, company documents, strategic alignment, IT leadership, business, technology resources and human resources should be considered as key business functions to derive and deliver business value from investments in information systems and technologies. Deriving business value and delivering business service should be looked at from both IT governance and IT management perspectives.

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